

USSR

SHCHERBAKOV, N. S.

"Use of Natural Redundancy of Shifting of an Automaton for Error Detection and Correction"

Sistemy Avtomatich. upr. [Automatic Control Systems -- Collection of Works], Kiev, 1971, pp 13-24, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V493 by O. Belkin).

Translation: It is noted that known methods of correction of errors in automata with memory are based on the principle used in correction of errors in interference-resistant communications channels. This article analyzes a number of methods of correction of errors requiring no redundancy in the set of states, inputs and outputs. Analysis of a number of automata shows that the use of the alphabet of states and inputs allows automata to be constructed in many cases with error correction, without requiring redundancy in the memory elements of the automata, but rather using natural redundancy determined by the functioning algorithms. The required redundancy is determined only by the decoding system, the complexity of which depends to a great extent on the correcting capacity of the automaton synthesized.

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USSR

UDC: 621.372.544(088.8)

SHCHERBAKOV, N. S., TIKHONOV, G. A., ZUBAREVA, N. A., GVOZDEV, S. A.

"A Flip-Flop Device"

USSR Author's Certificate No 263665, filed 18 Nov 68, published 8 Jun 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6G300 P)

Translation: A flip-flop device based on potential AND-OR logic elements is proposed. The device contains main and auxiliary setting flip-flops and four controlling circuits. To improve the operational reliability of the device, the outputs of the controlling circuits of the main setting flip-flop are connected to dissimilar inputs of the auxiliary setting flip-flop, and the outputs of the controlling circuits of the auxiliary setting flip-flop are connected to identical inputs of the main setting flip-flop. The inputs and outputs respectively of each of the controlling circuits of the main and auxiliary flip-flop are interconnected.

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USSR

UDC 8.74

IGNAT'YEV, M. B., FLEYSHMAN, B. S., KHOROSHEVSKIY, V. G., SHCHERBAKOV, O. V.

"Reliability of Homogeneous Computation Systems"

V sb. Vychisl. sistemy (Computation Systems--collection of works), vyp. 48, Novosibirsk, 1971, pp 16-47 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V411)

Translation: A study was made of the problems of reliability of homogeneous all-purpose computation systems. The monitoring and correction procedures for the computation processes are described. Definitions of systems with structural redundancy and long-lived systems are presented. These classes of systems include the known systems of reliability theory. The reliability indexes of the homogeneous all-purpose computation systems are introduced. A study was made of the approaches when estimating the reliability of the elementary computer of the homogeneous all-purpose computation systems. Stochastic models of these systems are constructed which lead to simple formulas for the reliability indexes. It is noted that the numerical results obtained by these formulas coincide with a known degree of accuracy with the results of the more exact but more tedious calculations. Approximate methods of calculating the indexes of the homogeneous all-purpose computation systems are also investigated. Asymptotic estimates of the reliability indexes of the systems are presented for

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IGNAT'YEV, M. B., et al., Vychisl. sistemy, vyp. 48, Novosibirsk, 1971, pp 16-47

$N \rightarrow \infty$. Divisions of the system into subsystems which are optimal from the point of view of reliability are found. The conditions are presented (logarithmic growth with time of the number of elementary computers) insuring reliability of the system as high as one might like. It is established that a sufficiently high reliability of such systems can be achieved, in particular, if their program organization is either by the principle of systems with structural redundancy or by the principle of long-lived systems. The proportion of the computers comprising the structural redundancy does not exceed a tenth part of the number of elementary computers in the system. The investigated principles have the advantage that they do not permit idle time of the elementary computers which are in a state of good repair. The methods of solving the monitoring and diagnostic problem for failures in homogeneous computation systems are noted. Calculation formulas were obtained for the technical-economic indexes. The problem of the optimal number m^* of devices in the repair system is solved. It was found that m^* comprises an insignificant portion of the number N of computers in the system; in addition, the ratio $m^*/N \rightarrow 0$ when $N \rightarrow \infty$. The results are illustrated by examples of homogeneous all-purpose computation systems. It is noted that highly efficient and highly reliable systems can be constructed on the existing physical-technological base. From the point of view of reliability,

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USSR

IGNAT'YEV, M. B., et al., Vychisl. sistemy, vyp. 48, Novosibirsk, 1971, pp 16-47

efficiency and cost homogeneous computation systems are a prospective area in computer engineering. The bibliography has 25 entries.

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Powder Metallurgy

USSR

UDC 621.791.75.001:537.523.5

STEL'MAKH, G. P., CHESNOKOV, N. A., POGORELOV, V. F., and
SHCHERBAKOV, S. A., Moscow

"Change in Properties of Dispersed Aluminum Oxide During the
Process of Plasma Spheriodization"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 2, Mar-Apr 71,
pp 133-137

Abstract: A study was made of the influence of the initial
particle size on the formation of the α , β , and γ modifica-
tions in the process of plasma spheriodization of dispersed
aluminum oxide. As a result of processing of the aluminum oxide
in an argon plasma, the quantity of volatile impurities in the
spheriodized particles was decreased, while the particle di-
mensions changed only slightly.

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Powder Metallurgy

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STEL'MAKH, G. P., CHESNOKOV, N. A., POGORELOV, V. F., and
SHCHERBAKOV, S. A., Moscow

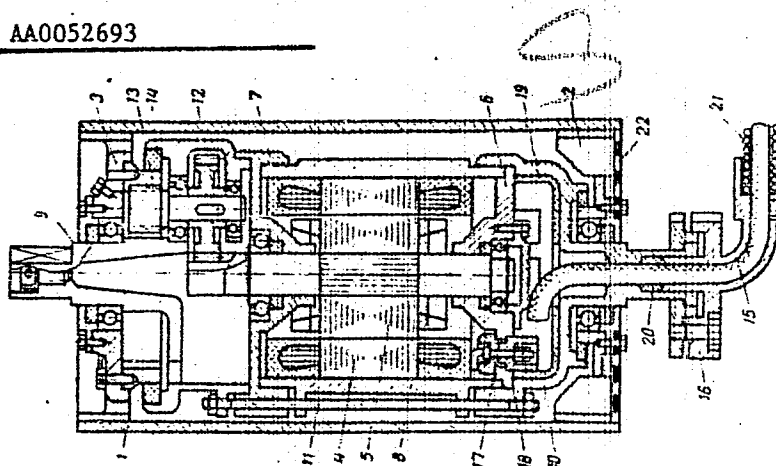
"Change in Properties of Dispersed Aluminum Oxide During the
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Moscow, Fizika i Khimiya Obrabotki Materialov, No 2, Mar-Apr 71,
pp 133-137

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aluminum oxide. As a result of processing of the aluminum oxide
in an argon plasma, the quantity of volatile impurities in the
spheriodized particles was decreased, while the particle di-
mensions changed only slightly.

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Acc. Nr.: AA0052693



Vol'ynko, Ye. P.; Shcherbakov, S. D.; Slinchenko, V. A.; Kirillov, G. B.

Gosudarstvennyy Institut po Proyektirovaniyu i Konstruirovaniyu Mashin dlya Gornorudnoy Promyshlennosti

2/2

REEL/FRAME
19821482

mp

AA 0052693

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-70

241279 EXPLOSION-PROOF MOTOR-DRUM for band
conveyors, comprising a drum with a built
in electric motor and reducer and a leading-in box.
The distinguishing feature of the proposed motor
drum is that the electric motor is fitted in a
case impervious to explosion which embodies bearing
 housings (6) and (7) and a shell (8) connected by
 pins (17) with the explosion proof case of the
 leading-in box, the latter serving as the shank
 (9) of the motor-drum. In addition, one of the
 bearing housings has apertures for leading out
 the windings of the stator (4) of the electric
 motor. This construction increases the explosion
 proof quality of the motor-drum and also ensures
 its compactness.

28.7.66. as 1093924/27-11, VOLYNKO, E.P. et al.
Inst. for the Projection and Construction of
Machines for the Mining Ind. (20.8.69) Bul.
13/1.4.69. Class 81e, 21d¹ Int. Cl. B 65g, H 02h.

1/2
18
19821481

USSR

UDC 616.993.162-022.39-034.47-036.8

1
SERGIYEV, P. G., REYSLEKHEM, R. I., MOSHKOVSKIY, Sh. D., DEMINA, N. A.,
KELLINA, O. I., SHUYKINA, E. Ye., SERGIYEV, V. P., DUKHANINA, N. N., TRIYERS,
I. I., SHCHERBAKOV, V. A., YARIJHAMEDOV, M. A., USKOV, N. Ye., LOSIKOV, I. N.,
and NEDOSPELOVA, Ye. I., Institute of Medical Parasitology and Tropical Medicine
Imeni Ye I. Martsinovskiy, Ministry of Health USSR, Moscow

"Results of Mass Vaccinations against Zoonotic Cutaneous Leishmaniasis"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 39, No 5,
Sep/Oct 70, pp 541-551

Abstract: Preventive mass vaccinations with a virulent strain of *Leishmania tropica* major were found to give reliable protection against cutaneous leishmaniasis. Only virulent strains can be used for vaccination. The degree of inoculation with such strains is almost 100%, the inoculative process having, as a rule, a favorable effect. The maximum size of the vaccination lesion does not exceed 2 cm in diameter in 3/4 of the subjects vaccinated. In practically all cases, the process does not last more than 5-6 months. Morbidity occurred in the group vaccinated with the low-virulence strain, among those without lesions, and among those whose lesions were less than 0.5 cm in diameter.

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USSR

SERGIYEV, P. G., et al., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni,
Vol 39, No 5, Sep/Oct 70, pp 541-551

Secondary pyococcal infections represented the only complications observed; allergic exanthem was noted occasionally. In order to prevent local and general allergic reactions after vaccination, it is necessary to exclude persons who have had cutaneous leishmaniasis. If past disease cannot be revealed by means of anamnesis or medical examination, the intracutaneous leishmanin test is recommended. The level of the virulence in inoculative strains should be periodically tested, since insignificant initial virulence or its weakening during culturing make a given strain unfit for preparation of inoculum.

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USSR

UDC 639.954

MASHTAKOV, S. M., (DECEASED), DEYEVA, V. P., VOLYNETS, A. P., PROKHORCHIK, R. A., SHCHERBAKOV, V. A., and KUDRYAVTSEV, G. P., Fiziologicheskoye Deystviye Nekotorykh Gerbitsidov na Rasteniya (The Physiological Effect of Certain Herbicides on Plants), Minsk, "Nauka i Tekhnika," 1971, 252 pp

Translation: Annotation: The book presents results from research on the effect of certain herbicides, gibberellic acid, and chlorochlorinechloride (?) on the biochemical activity of mitochondria and chloroplasts and the exchange of phenol compounds of plants. The physiological activity of a number of free and linked polyphenols is described. The relationship between the effect of herbicides on plants and the content of native phenol compounds and the level of energy potential of the plants being tested is discussed.

The book is intended for scientific associates, graduate students, teachers, and students at universities and agricultural and pedagogical higher educational institutions.

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MASHIAKOV, S. M. (DECEASED), et al., Fizicologicheskoye Deystviye Nekotorykh
Terbitsidov na Rasteniya, Minsk, "Nauka i Tekhnika," 1971, 252 pp

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MASHTAKOV, S. M., (DECEASED), et al., Fiziologicheskoye Deystviye Nekotorykh
Gerbitsidov na Rasteniya, Minsk, "Nauka i Tekhnika," 1971, 252 pp
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USSR

MASTAKOV, S. M., (DECEASED), et al., Fiziologicheskiye Deystviye Nekotorykh
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MASHTAKOV, S. M., (DECEASED), et al., *Fiziologicheskiye Deystviye Nekotorykh Gerbitsidov na Rasteniya*, Minsk i Tekhnika," 1971, 252 pp

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USSR

SHCHERBAKOV, V.I., Candidate of Technical Sciences

Algoritmy Skorosti (Velocity Algorithms), Moscow, ZNANIYE, Seriya Radioelektro-
nika i svyaz', No 10, 1972, 48 pp

Translation: In this booklet a study was made of the principles of radar veloc-
ity measurements, the selection of moving targets and joint determination of
the velocity and range with optical processing of the radar signals. Radio-
technical methods of studying the galaxies, stars and planets and also the
principles of constructing devices for determining the parameters of motion are
discussed. Attention is given to correlation methods of velocity measurement.

The booklet is designed for engineers and technicians, practical students
in the advanced classes and also people interested in the latest achievements
of science and engineering.

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SHCHERBAKOV, V.I., *Algorithmy Skorosti*, Moscow, ZNANIYE, Seriya Radioelektronika i svyaz', No 10, 1972, 48 pp

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Organometallic Compounds

USSR

UDC 547.256.81+547.256.83

SECHERBAKOV, V. I., ZHIL'TSOV, S. F., and DRUZHNIKOV, O. N.

"Thermal Decomposition of Organometallics of Thallium and Indium with Metal-Oxygen and Metal-Nitrogen Bonds"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 7, Jul 70, pp 1542-1545

Abstract: The article describes results of a study of the thermal decomposition (150-230°) of alkoxy compounds of thallium and indium exemplified by $(C_2H_5)_2MOC(CH_3)_3$ and amino substituted derivatives of the type $(C_2H_5)_2MN(C_2H_5)_2$. It was found that these alkoxy and amino derivatives of indium disproportionate to triethylindium and ethylindium di-tert-butylate and bis (diethylamino)ethylindium respectively. The stability of diethylindium tert-butylate was significantly higher than that of the corresponding thallium compound. Diethylthallium tert-butylate decomposed with cleavage of the Tl-C bonds and retention of the Tl-O bond. Thallous tert-butylate was formed quantitatively in the process. Diethylaminodiethylthallium decomposed with cleavage of both the Tl-C and Tl-N bonds.

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USSR

SHCHERBAKOV, V. I., SHEVCHENKO, N. A., NORENKO, N. P., and GUMANOV, L. L., Institute of Chemical Physics, Academy of Sciences USSR

"Superinfection Proteins' of Phage T4B of Escherichia coli and the Pleiotropic Effect of the r1 Mutation"

Moscow, Doklady Akademii nauk SSSR, Vol 194, No 1, 1970, pp 208-210

Abstract: An E. coli B culture was infected with phage T4r⁺ or T4r1 and, after 11 min, reinfected with T4r⁺. Samples taken 1 min after the first infection and every 2 min thereafter were transferred to test tubes containing 20 micro C of C14₂ hydrolysate of Chlorella protein. After 2 min of incubation, the sample was cooled in dry ice and the suspension precipitated by centrifugation. After certain other procedures, the supernatant was subjected to disk electrophoresis in a polyacrylamide gradient. The time at which the synthesis of most proteins began and ended was the same in both the mutant and the wild phage. However, in the late stages of the latent period, the r1 mutant contained radioactive proteins that were absent in cells infected with the wild phage. After infection of E. coli B under conditions preventing reinfection, or after superinfection during the late stages of the latent period, certain proteins could not be found. These proteins appeared only after repeated infection at the start of the latent period and only

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SHCHERBAKOV, V. I., et al, Doklady Akademii nauk SSSR, Vol 194, No 1, 1970.
pp 208-210

when the cells were initially infected with the mutant. If the cells were initially infected with the wild phage, the proteins were not revealed by gel electrophoresis, regardless of whether the culture was reinfected. The process of superinfection is considered to be connected with the regulation of protein synthesis in infected cells. The superinfection proteins are apparently directly involved in the retardation of lysis.

2/2

1/2 017 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ON THE ROLE OF TEMPORAL AREAS OF THE NEOCORTEX IN THE INTERGRATION
OF BRAIN ACTIVITY -U-
AUTHOR-(02)-BELENKOV, N.YU., SHCHERBAKOV, V.I.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 2, PP
317-326
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CEREBRAL CORTEX, CONTITIONE REFLEX, BRAIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/1706 STEP NO--UR/0247/70/020/002/0317/0326
CIRC ACCESSION NO--AP0106446
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0106446

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BILATERAL FUNCTIONAL ELIMINATION (COOLING) OF THE TEMPORAL AREAS OF THE CEREBRAL CORTEX IN CATS PRODUCES CONSIDERABLE CHANGES IN THEIR BEHAVIOUR. BOTH THE LOWER AND HIGHER NERVOUS ACTIVITY IS DISTURBED. THE PREVIOUSLY ELABORATED CONDITIONED REFLEXES DISAPPEAR. HOWEVER, SYSTEMATIC REVERSIBLE ELIMINATIONS OF THE TEMPORAL AREAS ARE FOLLOWED BY A GRADUAL RECOVERY OF INBORN AND ACQUIRED REACTIONS. THIS TESTIFIES TO A LARGE COMPENSATORY RESOURCES OF THE REST OF THE BRAIN AND ITS CAPACITY FOR A SUBSTANTIAL REORGANIZATION. THE DISAPPEARANCE OF ALIMENTARY CONDITIONED MOTOR REFLEXES IN THE FIRST EXPERIMENTS WITH THE COOLING OF THE TEMPORAL CORTEX SHOULD BE RELATED TO THE DISTURBANCE OF STIMULI DISCRIMINATION BY THE ANIMALS, I. E. DISTURBANCE OF THEIR ANALYTICAL AND SYNTHETIC ACTIVITY, OR AFFERENT SYNTHESIS. THE TEMPORAL AREAS OF THE NEOCORTEX PLAY A VERY IMPORTANT PART IN THE INTEGRATIVE ACTIVITY OF THE BRAIN. PERCEPTION OF AUDITORY INFORMATION IS BUT ONE OF THE ELEMENTS OF THEIR COMPLEX FUNCTION.

FACILITY: CHAIR OF PHYSIOLOGY AND LABORATORY OF NEUROPHYSIOLOGY, KIROV MEDICAL INSTITUTE, GORKY.

UNCLASSIFIED

USSR

UDC 621.762.2

SHCHERBAKOV, V. K.

"Regions of Application and Prospects for Development of Light Metal Powder Production"

Tr. Vses. n.-i. i provektn. in-ta alyumin., magn. i elektrodn. prom-sti
(Works of the All-Union Scientific Research and Design Institute of the
Aluminum, Magnesium and Electrode Industry), 1970, No 71, pp 218-224 (from
RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G440)

Translation: A description of the areas of application of Al, Mg, and Al-Mg alloy powders is presented. The existing methods of obtaining certain powders are investigated, and their advantages and disadvantages are noted. A survey of literature on obtaining light metal powders with various properties is made, and the prospects for development of the production of these powders are investigated. The bibliography has 47 entries.

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1/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--INVESTIGATING THE DISTRIBUTION OF VELOCITIES IN PIPES WITH INTERNAL
LONGITUDINAL RIBBING -U-
AUTHOR-(03)-ORNATSKIY, A.P., SHCHERBAKOV, V.K., SEMENA, M.G.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, TEPLONERGETIKA, NO. 2, 1970, PP 75-77
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--RESEARCH FACILITY, STEEL PIPE, REINFORCED MATERIAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0354 STEP NO--UR/0096/70/000/002/0075/0077
CIRC ACCESSION NO--AP0117591
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117591

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. RATIOS ARE OBTAINED FOR THE VALUE OF THE VELOCITY ON THE BOUNDARY BETWEEN THE JOINING OF THE CHANNEL BETWEEN THE RIBS AND THE BASIC FLOW AND FOR THE VALUE OF THE AVERAGE VELOCITY ALONG THE AXIS OF THE CHANNEL, TO THE AVERAGE DISCHARGE VELOCITY AND THE GEOMETRIC DIMENSIONS OF THE PIPE. FACILITY:

KIEV POLYTECHNIC INSTITUTE.

UNCLASSIFIED

1/2 040

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--A METHOD OF FORMING SEVERAL STABLE STATES IN PARAMETRONS BASED ON A THIN MAGNETIC FILM -U-

AUTHOR--(03)-SALANSKIY, N.M., LITVINCHUK, V.I., SHCHERBAKOV, V.M.

COUNTRY OF INFO--USSR

SOURCE--USSR PATENT 263668

REFERENCE--MOSCOW, OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI, NO

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MAGNETIC THIN FILM, PARAMETRON, MAGNETOSTRICTION, ELASTIC STRESS, MECHANICAL VIBRATION, AUTHOR CERTIFICATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0136

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0111330

UNCLASSIFIED

2/2 040

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AA0111330

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THIS AUTHOR'S CERTIFICATE INTRODUCES A METHOD OF FORMING SEVERAL STABLE STATES IN PARAMETRONS BASED ON A THIN MAGNETIC FILM. THE METHOD DIFFERS BECAUSE TO IMPROVE THE RESISTANCE TO INTERFERENCE, FLEXURAL OSCILLATIONS OF THE FILM SUBSTRATE SYSTEM ARE INDUCED BY MAGNETOELASTIC INTERACTION, AND THE AMPLITUDE OF THE MAGNETIZING FIELD IS THEN CHANGED TO THE THRESHOLD VALUES OF THE SUBSEQUENT ELASTIC MODES.

UNCLASSIFIED

USSR

UDC: 621.317.783(088.8)

KOGAN, V. L., SHCHERBAKOV, V. N.

"A Self-Balancing Thermistor Bridge for Measuring SHF Power"

USSR Author's Certificate No 255407, filed 19 Aug 68, published 27 Mar 70
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A325 P)

Translation: The proposed self-balancing thermistor bridge differs from existing bridges for similar purposes in the fact that a comparison device with a short pulse generator is used as the balance pickup; the heating generator is a Kipp oscillator whose input is connected to the output of the balance pickup, while the output is connected to the base of a transistor. As the SHF power level changes, a change is observed in the duty factor of the voltage pulses generated across the thermistor. This variation is indicated on a dial meter, which gives increased precision. E. L.

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USSR

UDC 621.385.632

DVINSKIKH, V.A., KOGAN, V.L., SHCHERBAKOV, V.N.

"Measurement Of The Noise Factor At The Outer Points Of The Operating Frequency Bands Of Low-Power TWTs"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T 2
(Proceedings Of The All-Union Scientific-Technical Conference On Radio Engineering Measurements. Vol. 2), Novosibirsk, 1970, pp 23-26 (from RZh---Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A178)

Translation: In order to tune every low-noise traveling-wave tube it is necessary simultaneously to have information on the noise factor in all operating frequency bands. However, it is possible to reduce the number of measurements of the noise factor to two (at the outer points of the band) if a priori data on the concave character of the dependence of the noise factor on the frequency is employed. The work in question is devoted to a justification of this type of dependence. In conclusion, a two-channel measurer of the noise factor is described, which assures simultaneous measurement at two points of the band. 3 ref. N.B.

1/1

USSR

S UDC 681.326.34(681.325.65)

SALANSKIY, N. M., LITVINCHUK, V. I., SHCHERBAKOV, V. M., Institute of Physics of the Siberian Department of the Academy of Sciences of the USSR

"A Method of Forming Several Stable States in Parametrons Based on a Thin Magnetic Film"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 8, 10 Feb 70, p 37, Patent No 263668, Filed 24 Dec 68

Translation: This Author's Certificate introduces a method of forming several stable states in parametrons based on a thin magnetic film. The method differs because to improve the resistance to interference, flexural oscillations of the film-substrate system are induced by magnetoelastic interaction, and the amplitude of the magnetizing field is then changed to the threshold values of the subsequent elastic modes.

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USSR

UDC: 621.396.6.002:681.3

NAZAROV, V. A., SHCHERBAKOV, V. S.

"Determination of Dimensions in Unit-Modular Design With the Use of Mathematical Modeling"

Elektron. tekhnika. Nauch.-tekhn. sb. Tekhnol. i organiz. proiz-va (Electronic Technology. Scientific and Technical Collection. Technology and Organization of Production), vyp. 2(42), pp 35-41 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V285)

Translation: This paper deals with the principles of creating a single system for coordination of dimensions in unit-modular design of equipment for production of articles in electronic technology. It is proposed that computers be used in determining the optimum dimensional parameters of individual units and modules. Requirements which affect optimization of dimensions are presented together with examples of finding the best design by using a mathematical model of the object. Resumé.

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SHCHERBAKOV, Ya. Ye., Candidate of Technical Sciences, Moscow
Institute of Engineers of Geodesy, Aerial Surveying, and Carto-
graphy

"Investigation of Oscillations of the Aerial Camera During the
Cycle"

Moscow, IVUZ Geodeziya i Aerofotos'yemka, No 6, 1970, pp 94-98

Abstract : The oscillations of the aerial camera 41/10 were in-
vestigated on a photometric unit formerly described by the au-
thor (Moscow, Institute of Engineers of Geodesy, Aerial Survey-
ing, and Cartography, 1969). From illustrated correlation func-
tions of the camera shutter derived from mathematical processing
of oscillograms for different exposures (1/60, 1/120, 1/250, and
1/500 sec) and from graphs of spectral densities of the oscilla-
tion process of the aerial camera during the cycle follows that
maximum angular camera oscillations occur in the frequency inter-
val of 7—11 Hz, which is close to the resonance frequency of the
system. Practical recommendations are given for localizing inter-
nal oscillation sources of the 41/10 camera during the cycle.
Since the frequency range of oscillations is quite large, an amor-
tization system of the camera with constant parameters will not
represent the optimum solution. The latter could be realized only
by a self-adjusting amortization system with adaptation to chan-
ging working conditions. Two illustr., four formulas, four biblio.
refs.
1/1

USSR

UDC: 621.396.622.23

SHCHERBAKOV, Yu. F.

"Nonlinear Characteristics of Multiplicative Frequency Converters"

Leningrad, Priborostroyeniye, No 4, 1972, pp 5-8

Abstract: Nonlinearities arising in frequency conversion by heterodyning, especially in heterodyne systems using semiconductors, are considered. The need for an element with a square-law volt-ampere characteristic for linearity in the frequency conversion, thus avoiding the distortion of the converted signal occasioned by the nonlinearities, is also discussed. It is found that the effect on the converted signal when a semiconductor device is used differs from that introduced by ordinary diode devices. An evaluation is made of multiplicative converters, the name given to a system of heterodyne conversion based on direct analog multiplication of the operating signals, and they are compared with conventional mixer tubes. The author is connected with the Leningrad Institute of Aviation Instrument Construction.

1/1

- 80 -

USSR

UDC: 621.373:530.145.6

MIKAELYAN, A. L., KUPRISHOV, V. F., TURKOV, Yu. G., ANDREYEV, Yu. V.,
SHCHERBAKOVA, A. A.

"Investigation of Emission From a Ruby Laser With Automatic Q-Switching"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 1,
Moscow, 1971, pp 102-109 (from RZh-Radiotekhnika, No 5, May 71, Abstract
No 5D182)

Translation: The paper presents the results of a study of the effects of
giant pulse emission in a ruby laser which does not contain special switching
elements. Automatic Q-switching is achieved by using unstable configurations
of the optical cavity. Seven illustrations, bibliography of five titles.
Resumé.

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- 94 -

1/2 032 UNCLASSIFIED PROCESSING DATE--20NDV70
TITLE--A NEW METHOD FOR THE GENERATION OF A GIANT PULSE IN LASERS -U-
AUTHOR--(05)--MIKAELIAN, A.L., KUPRISHOV, V.F., TURKOV, YU.G., ANDREYEV,
YU.V., SHCHERBAKOVA, A.A.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, PIS'MA V ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY
FIZIKI, VOL 11, NO 5, 5 MAR 70, PP 244-246
DATE PUBLISHED--70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--GIANT PULSED LASER, RUBY LASER, REFRACTIVE INDEX
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1721 STEP NO--UR/0386/70/011/005/0244/0246
CIRC ACCESSION NO--AP0123528
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0123528

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DESCRIBES A NEW METHOD FOR THE GENERATION OF GIANT PULSES IN A RUBY LASER WHICH DOES NOT INVOLVE THE INTRODUCTION OF ADDITIONAL MODULATING ELEMENTS INTO THE CAVITY. THE OSCILLATOR DESIGN WAS DESCRIBED IN AN EARLIER ARTICLE BY THE AUTHORS. A RUBY CRYSTAL WITH SAPPHIRE ENDPieces 7 MM IN DIAMETER AND 120 MM LONG (TOTAL CRYSTAL LENGTH 157 MM) WAS USED. EXCITATION WAS EFFECTED BY MEANS OF AN IFP-1200 FLASHLAMP. THE CAVITY CONSISTED OF A FULLY REFLECTING SPHERICAL MIRROR. THE GENERATION MODE OF THE LASER DEPENDS ESSENTIALLY ON THE LENGTH OF THE CAVITY. WITH LENGTH VALUES CORRESPONDING TO THE STABILITY REGION OF THE CAVITY ORDINARY FREE GENERATION TAKES PLACE, ACCOMPANIED BY SPIKES. AN INCREASE IN VALUES CORRESPONDING TO THE REGION OF CAVITY INSTABILITY CHANGES THE CHARACTER OF THE GENERATION, AND GIANT PULSE RADIATION IS OBSERVED ALONG WITH THE FREE GENERATION SPIKES. IT IS SUGGESTED THAT THE MECHANISM INVOLVED IN THE OBSERVED PHENOMENA IS DUE TO A CHANGE IN THE COURSE OF THE BEAMS IN THE CAVITY AS A RESULT OF CHANGES IN THE REFRACTIVE INDEX OF THE RUBY CROSS SECTION ACCORDING TO THE FIELD IN THE CAVITY. IT IS NOTED THAT THE PRINCIPLE OF GIANT PULSE GENERATION BEING CONSIDERED DOES NOT NOT DEPEND ON THE RADIATION WAVELENGTH AND APPARENTLY CAN BE USED FOR NEODYMIUM GLASS AND OTHER ACTIVE MEDIA WHICH GENERATE IN THE IR RANGE.

FACILITY: MOSCOW SCIENTIFIC RESEARCH INSTITUTE OF INSTRUMENT BUILDING.

UNCLASSIFIED

USSR

MIKAEL'YAN, A. L., KUPRISHOV, V. F., TURKOV, YU. G., ANDREYEV, YU. V.,
and SHCHERBAKOVA, A. A., Moscow Scientific Research Institute of In-
strument Building

"A New Method for the Generation of a Giant Pulse in Lasers"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki,
Vol 11, No 5, 5 Mar 70, pp 244-246

Abstract: The article describes a new method for the generation of giant pulses in a ruby laser which does not involve the introduction of additional modulating elements into the cavity. The oscillator design was described in an earlier article by the authors. A ruby crystal with sapphire endpieces 7 mm in diameter and 120 mm long (total crystal length 157 mm) was used. Excitation was effected by means of an IFP-1200 flashlamp. The cavity consisted of a fully reflecting spherical mirror. The generation mode of the laser depends essentially on the length of the cavity. With length values corresponding to the stability region of the cavity ordinary free generation takes

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MIKAELIAN, A. L., et al., Pis'ma v Zhurnal Eksperimental'noy i Teo-
reticheskoy Fiziki, Vol 11, No 5, 5 Mar 70, pp 244-246

place, accompanied by spikes. An increase in values corresponding to the region of cavity instability changes the character of the generation, and giant pulse radiation is observed along with the free-generation spikes. It is suggested that the mechanism involved in the observed phenomena is due to a change in the course of the beams in the cavity as a result of changes in the refractive index of the ruby cross section according to the field in the cavity. It is noted that the principle of giant pulse generation being considered does not depend on the radiation wavelength and apparently can be used for neodymium glass and other active media which generate in the IR range.

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SHCHERBAKOVA, A. I.

JPRS 55320
1 MAR 72

UDC: 616.36-089.873-07:616.36-003.
93-02:615.277.4:582.825.123

MECHANISM OF ACTION OF AFLATOXIN ON REGENERATED HYPERTROPHIC LIVER FOLLOWING
PARTIAL HEPATECTOMY

[Article by A.A. Pokrovskiy, M.K. Nikolayeva, N.V. Lashneva, M.M. Gannazov,
A.I. Shcherbakova, E.A. Korotnikov, N.N. Aronova, Institute of Nutrition, USSR
Academy of Medical Sciences, Moscow; Vostok Akademii Meditsinskikh
Nauk SSSR, Russian, No 1, 1972, pp 45-56]

Present conceptions about the mechanism of action of aflatoxins (a group of highly toxic hepatocarcinogenic metabolites of some species of mold fungus) are reflected in several surveys (Wogan, 1966; Rees; A.A. Pokrovskiy, N.V. Lashneva et al., 1972) and experimental articles (Clifford and Rees, 1967; King and Nicholson). To date extensive factual material has been accumulated which suggests that one of the mechanisms of toxic action of aflatoxins (hepatocarcinogenic lesion to the liver, on the one hand, and marked hepatocarcinogenic effect, on the other) consists of interaction between aflatoxins and liver cell DNA (Clifford and Rees, 1969). It was shown that aflatoxin, like actinomycin D, forms complexes with the DNA molecule through attachment to adenine and guanine amino groups, so that the pentose-phosphate group remains unaltered. Such interaction leads to impairment of the transcription process (Lindberg and Traavast). i.e. to impairment of RNA-dependent RNA synthesis. The consequence of this disturbance is inhibition of DNA- and RNA-polymerase synthesis which, in turn, is associated with rapid and visible necrosis of hepatic RNA and DNA synthesis. The latter is demonstrable in particular in the case of a regenerated hypertrophic liver (Bukacinski et al., 1965, 1966).

Some authors observed injury to the ribosomal system, consisting of breakdown of polysomes and changes in their profile (Pong and Wogan, 1966). For this reason one would have expected aflatoxin to suppress protein synthesis. This was confirmed in in vitro experiments (Smith, Clifford and Rees, 1967). Yet in vivo experiments failed to demonstrate distinct changes in incorporation of labeled precursors in the rat's liver proteins following administration of aflatoxin (Rees and Wogan). In addition, it was possible to demonstrate aflatoxin induced blocking of hormonal and substrate induction of some enzymes (Wogan and Friedman; Pong and Wogan, 1966).

USSR

UDC 616.288.75+616.2-036.11]-053.2-085.339:576.858]-039.71

YERMOL'YEVA, Z. V., BLINOVA, M. I., FURER, N. M., RITOVA, V. V., KUCHERENKO, L. P., NEMIROVSKAYA, B. M., SYCHERRAKOVA, E. G., SCHASTNYI, E. I., ORLOVA, L. N., and FAYNSHTEYN, S. L., Chair of Microbiology, Central Institute for Advanced Training of Physicians, and Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"Prophylaxis of Influenza and Other Acute Respiratory Diseases Among Children Through Administration of Leukocytic Interferon and a Stimulant of Interferon Production (UF Virus)"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 442-446

Abstract: An express method of preventing influenza and other acute respiratory diseases was tested in childrens' institutions in Moscow during the interepidemic period of March-June 1968 and during the influenza epidemic in January-February 1969. The project was carried out under strictly controlled, coded experimental conditions. The 750 children, aged 10 months to 7 years, were divided into four groups at random, and the preventive agents were administered intranasally. One group received leukocytic interferon two times per day for 7 to 42 days. The second group received interferon with liquid ecmoline. The third group received UF virus once daily for 3-4 days with

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USSR

YERMOLOVA, Z. V., et al, Voprosy Virusologii, No 4, Jul/Aug 71, pp 442-446

intervals of 3-4 days. The fourth group received placebos. The effectiveness index of interferon was 3.0 (frequency of diseases three times smaller than in the placebo group) in the interepidemic period and 2.2 during the epidemic. The effectiveness index of interferon with ecmoline was 1.8, and that of U₁ virus was 3.0 in the interepidemic period. All differences are statistically significant. Since no toxic effects were observed, the method is recommended for the prevention of influenza and other acute respiratory diseases.

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USSR

UDC 615.37:[576.858.095.383:611-018.35

SHCHERBAKOVA, E. G., EYDEL'SHIYIN, S. I., and FURER, N. M., Laboratory for New Antibiotics and Other Natural Compounds, Department of Microbiology, Central Institute for the Advanced Training of Physicians, Moscow

"Pharmacological Studies on Human Leukocyte Interferon"

Moscow, Antibiotiki, Vol 18, No 3, 1973, pp 256-259

Abstract: Studies were conducted on cats, rabbits, mice, and dogs to determine possible toxic effects of human leukocyte interferon (HLI). Acute toxicity studies were conducted on 18-20 g mice and 1.5-2.0 kg rabbits, employing HLI with activities of 1200-1500 units/ml; intravenous (iv) injections of 1 ml to mice and 1-5 ml/kg to rabbits were well tolerated and did not result in any abnormal changes. When HLI was administered to dogs, 5-10 ml/kg, iv, there were no changes in respiration, pulse rate, or in the EKG. The iv administration of HLI, 1 ml/kg, to rabbits did not elicit any pyrogenic effects. When HLI was administered iv to cats under urethan anesthesia there were no significant changes in the arterial blood pressure; the insignificant hypotension that was observed was less than that elicited by 0.1 μ g/kg of histamine. Intracutaneous administration of 0.1 ml to rabbits did not evoke necrosis or infiltration. Subconjunctival administration of HLI (0.1-0.5 ml) in rabbits resulted in limited hyperemia and insignificant edema, all signs of which disappeared by 1/2

USSR

SHCHERBAKOVA, E. G., et al., Antibiotiki, Vol 18, No 3, 1973, pp 256-259

24 h. HLI was found to increase the ciliary activity of kitten trachea, which may be regarded as a favorable sign that would lead to more rapid elimination of respiratory viruses. Chronic studies on 18-20 g mice receiving 0.25 ml of HLI daily subcutaneously for 3 weeks did not elicit any local changes or differences in weight or behavior in comparison with control animals. Similarly, no negative effects were noted in rabbits on iv administration of HLI at a dose of 1 ml/kg daily for 2 weeks; blood studies were normal. Autopsies of mice and rabbits did not show any pathologic changes in any of the organs. Daily instillation of 0.1 ml of HLI into the conjunctival sac of rabbits did not evoke any changes in the epithelium or the cornea. The administration of 0.5 ml into each nasal passage of 15-20 g mice (t.i.d for 5 days) was without adverse effects on the mucous membrane or the respiratory system. Thus, on the basis of histological and pharmacological studies, HLI has been shown to be completely nontoxic and without adverse effects on the growth and development of young animals.

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USSR

UDC 615.331 (PRODIGIOSANUM).015.46.

YERMOL'YEVA, Z. V., VAYSBERG, G. YE., BRAUDE, A. I., TARANENKO, L. A.,
LUSHINA, L. A., GIVENTAL', N. I., and SHCHERBAKOVA, E. G., Laboratory of
Medical Pathology and Laboratory of New Antibiotics, Chair of Microbiology,
TsIU [Central Institute for the Advanced Training of Physicians], Moscow

"The Effect of Prodigiozan Inhalation on the Immunological Reactivity of the
Human Body"

Moscow, Antibiotiki, Vol 18, No 1, 1973, pp 76-79

Abstract: Inhalation of prodigiozan promotes immune reactions in the human
body. Thus, in a group of 78 subjects aged 19 to 59, a single inhalation of
5 ml of a 0.04% prodigiozan aerosol (obtained under 0.5-0.8 atm at a rate of
12-15 L/min) increased the number of active neutrophils from 53 to 74% in 24
hrs in all subjects, and the increased phagocytic activity was maintained at
least up to the 48th hr after inhalation. At the same time, the inhaled
prodigiozan increased alkaline phosphatase activity in the neutrophils of
peripheral blood from 42 to 115 conventional units in 35 out of 39 subjects,
raised lysozyme concentration from 2.7 to 3.5 mcg/ml of blood serum in 12 out
of 27 subjects, and induced formation of interferon in titers of 7-13 units/
ml serum in 10 out of 10 subjects. It is concluded that a single inhalation of
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YERMOL'YEVA, Z. V., et al., Antibiotiki, Vol 18, No 1, 1973, pp 76-79

prodigiozan aerosol significantly stimulates humoral and cellular components of human immunological reactivity.

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USSR

UDC 541.13:542.91:546.28'131:547.241

KARTSEV, G. N., ALEYNPKOV, V. I., SMIRNOVA, N. V., GLUBOKOV, YU. M., and
SHCHERBAKOVA, E. S., Institute of Metallurgy imeni A. A. Baykova, Academy of
Sciences USSR and Moscow Institute of Fine Chemical Technology imeni
M. V. Lomonosova

"Dielectric Study of the Interaction of Silicon, Germanium, and Tin Tetra-
chlorides With n-Tributylorthophosphate"

Moscow, Seriya Khimicheskaya, 9, 1973, pp 1972-1975

Abstract: The title study was carried out in order to establish the thermody-
namic properties and structures formed during the reaction of these tetrachlo-
rides with tributylorthophosphate (TBP) by a dielectrometric titration. No
significant reaction was observed in the SiCl_4 -TBP and GeCl_4 -TBP systems. In
the SnCl_4 -TBP, stepwise molecular complexes were formed having ratios of
reactants of 1:1 and 1:2. Equilibrium concentrations were calculated by com-
puter for the complex-forming reactions between SnCl_4 and TBP. From these
equilibrium constants were determined. The dipole moments were measured for the
complexes and related to the specific conformation of the complex.

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Acc. Nr:

AP0048938

Abstracting Service:

CHEMICAL ABST. 5/70

Ref. Code:

4R0039

104671x Thermodynamics of reactions for the formation of $A + D \leftrightarrow A.D$ -type molecular compounds. Gol'dshtein, I. P.; Gur'yanova, E. N.; Shcherbakova, M. S. (USSR). *Zh. Obshch. Khim.* 1970, 40(1), 183-91 (Russ). The thermodynamic parameters of ΔH , ΔS , and ΔG were detd. for the series of complexes formed by $SnCl_4$, $SnBr_4$, $TiBr_4$, and $GaCl_3$ with such substances as $MeCN$, $(CH_3O)_2CH_2$, $(CH_3CH_2O)_2CH_2$, $(CH_3SBu)_2$, $CH_3(CH_2SBu)_2$, $(CH_3CH_2SBu)_2$, $PhCN$, CH_3CHCN , $EtCN$, Bu_2O , $(C_3H_7)_2O$, Pr_2S , Bu_2S , $(C_3H_7)_2S$, and Et_3N , as well as a wide selection of aliphatic esters, sulfides, phosphines and ethers in their complexes with I_2 , BF_3 , BCl_3 , Me_3B ; also included were complexes formed by Ph_2SO , Et_3N , and pyridine with $PhOH$, *p*-methoxy and *m*-Me analogs, as well as isomeric Cl analogs and NO_2 analogs. A linear relation exists between enthalpy of such complex formation and the entropy value. In case of some 81 such complexes this relation is general for donor-acceptor complexes. The linear relation between ΔH and ΔS is based principally on change in the internal degrees of freedom in the process of complex formation. G. M. Kosolapoff -

REEL/FRAME

19800710

71x

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--INVESTIGATION OF THE STRUCTURE OF MOLECULES BY GAS ADSORPTION
CHROMATOGRAPHY -U-
AUTHOR--(02)--KUZNETSOV, A.V., SHCHERBAKOVA, K.D.
COUNTRY OF INFO--USSR
SOURCE--J. CHROMATOGR. 1970, 49(1), 21-6
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MOLECULAR STRUCTURE, GAS CHROMATOGRAPHY, CARBON BLACK, ISOMER,
PENTENE, CYCLIC GROUP
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0054 STEP NO--NE/0000/70/049/001/0021/0026
CIRC ACCESSION NO--AP0125889
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125889

ABSTRACT/EXTRACT--(U) GP-Q- ABSTRACT. THE IDENTIFICATION OF STRUCTURAL ISOMERS BY GAS ADSORPTION CHROMATOGRAPHY ON GRAPHITIZED CARBON BLACK IS DISCUSSED AND DEMONSTRATED BY IDENTIFYING THE CIS AND TRANS ISOMERS OF C₆-12 CYCLIC HYDROCARBONS, 3-METHYL-2-PENTENE, AND 3,4-DIMETHYL-2-PENTENE. THE THEORETICALLY CALCULATED POTENTIAL ENERGIES OF ADSORPTION OF THE COMPOUNDS ARE CORRELATED WITH THEIR HEATS OF ADSORPTION OF GRAPHITIZED CARBON BLACK. FACILITY: LAB. ADSORPTION GAS CHROMATOGRAPHY, M. V. LOMONOSOV STATE UNIV. MOSCOW, MOSCOW, USSR.

UNCLASSIFIED

1/3 017 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EFFECT OF TEMPERATURE AND PH OF THE MEDIUM ON THE CONCENTRATION OF
FREE RADICALS IN WOOD AND ON ITS BRIGHTNESS -U-
AUTHOR--(04)-SUKHTEYEV, B.M., KLEYMENOVA, T.A., IVANOV, M.A., SHCHERBAKOVA,
L.D.
COUNTRY OF INFO--USSR
SOURCE--BOM. PROM. 1970, (4), 22-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--PYROLYSIS, WOOD, CHAIN REACTION, EPR SPECTRUM, FREE RADICAL,
CHEMICAL REACTION TEMPERATURE, THERMAL DECOMPOSITION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1999/1766 STEP NO--UR/0329/70/000/004/0022/0023
CIRC ACCESSION NO--AP0123564
UNCLASSIFIED

2/3 017

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123564

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXOTHERMIC DECOMPN. OF WOOD (DURING PYROLYSIS), WHICH CAN BE REGARDED AS A SERIES OF CHAIN REACTIONS INVOLVING FREE RADICALS, BEGINS AT 275DEGREES. THE PRESENCE OF FREE RADICALS IN WOOD AT LOWER TEMPS., SUCH AS USED IN KRAFT AND SOOA PULPING, HAS BEEN REPORTED AND THERE IS REASON TO BELIEVE THAT WOOD DEGRADATION PROCESSES, PROBABLY INVOLVING FREE RADICALS, OCCUR AT THESE LOW TEMPS. EPR SPECTRA OF SPRUCE, BIRCH, AND ASPENWOOD FLOUR SAMPLES EXPOSED FOR 5-25 MIN TO TEMPS. OF 120, 140, AND 160DEGREES SHOWED THAT 5 MIN HEATING AT 120DEGREES RESULTS IN RECOMBINATION OF PART OF THE STABLE FREE RADICALS. FURTHER HEATING AT THIS TEMP. HAS NO EFFECT ON THE FREE RADICAL CONC. THE CHANGES IN RADICAL CONC. DURING HEATING AT 140 AND 160DEGREES DEPEND ON THE NATURE OF THE WOOD. IN SPRUCE AND BIRCHWOODS, RECOMBINATION OF RADICALS TAKES PLACE DURING THE 1ST FEW MIN; WHILE IN ASPENWOOD, THIS PROCESS IS NOT OBSERVED BECAUSE OF THE INTENSE FREE RADICAL INITIATION WHICH BEGINS DURING THE 1ST MIN OF HEATING. HEATING AT 140 AND 160DEGREES CAUSES DARKENING OF THE WOOD. THE EXPTS. WERE REPEATED WITH WOOD FLOUR SAMPLES TREATED FOR 45 MIN AT 120-130DEGREES WITH BUFFER SOLNS. AT PH'S 1.4-12.5. SIMULTANEOUSLY DETNS. WERE MADE OF THE BRIGHTNESS OF THE WOOD. IN WEAKLY ACIDIC AND NEUTRAL MEDIA, THE FREE RADICAL CONC. WAS THE LOWEST AND THE WOOD BRIGHTNESS WAS THE HIGHEST. THIS CONFIRMS THE LIMITED FORMATION OF CHROMOPHORE GROUPS IN LIGNIN IN RADICAL REACTIONS AT NEUTRAL AND WEAKLY ACIDIC PH (SUCH REACTIONS OCCUR MORE EASILY AT ALK. PH).

UNCLASSIFIED

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CIRC ACCESSION NO--AP0123564

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--THE OVERALL CONCLUSION IS THAT THERMAL INITIATION OF
FREE RADICALS OCCURS AT RELATIVELY LOW TEMPS., BUT THE REACTIONS
INVOLVING FREE RADICALS ARE OF LOW INTENSITY AND DO NOT DEVELOP INTO
CHAIN REACTIONS.

FACILITY: VNIID, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 577.472;542.98;667.61

DOLGOPOL'SKAYA, M. A., GUREVICH, Ye. S., GEYNE, Ye. I., SHCHERBAKOVA, L. I.
"Concerning the Procedure of Accelerated Tests on Antifouling Paints"

Kiev, Biologiya Morya -- Sbornik (Biology of the Sea--Collection of Works),
No 18, The Biology of Fouling, 1970, pp 52-60

Abstract: During the development of new antifouling coatings, it is of great significance to establish the biological activities of the employed poisons as well as the rate and duration of their leaching out into sea water. The biological method of determining the effectiveness of paint, in distinction from the glycine method, permits the evaluation of any kind of paint, including those not containing copper compounds. Use of the hay bacillus or marine bacteria as an object of biological control may serve as a method of the comparative evaluation of effectiveness only for paints with a different film-forming base, but with identical composition of the poisons. As a test object for testing paint activity, the authors propose the use of daphnia,

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USSR

DOLGOPOL'SKAYA, M. A., et al., Biologiya Morya -- Sbornik, No 18, 1970,
pp 52-60

cultured and adapted to water of 6‰ salinity. This method gives convincing results and may be used for evaluating the biological activity of paints the year round in a region far from the sea. 2 tables. 6 bibliographic entries.

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1/2 020
UNCLASSIFIED
PROCESSING DATE--20NOV70
TITLE--N,4,PYRIMIDINYL,ETHYLAMINE. III. 2,5,6,DERIVATIVES -U-
AUTHOR--(05)-SOKOLOVA, V.N., MEDNIKOVA, G.A., MAGIDSON, O.YU.,
SHCHERBAGOVA, L.I., PERSHIN, G.N.
COUNTRY OF INFO--USSR
SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (3), 422-6
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY
TOPIC TAGS--PYRIDINE, AMINE DERIVATIVE, ANTITUBERCULAR DRUG,
BACTERIOSTASIS, MOLECULAR STRUCTURE, CHEMICAL SYNTHESIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/0995
STEP NO--UR/0409/70/000/003/0422/0426
CIRC ACCESSION NO--AP0130041
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0130041

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SHOWN ON MICROFICHE. HIGH
TUBERCULOSTATIC ACTIVITY AGAINST H SUB37 RV (MYCOBACTERIUM TUBERCULOSIS)
WAS FOUND FOR A FEW OF THE SYNTHESIZED COMPOS., THE OTHERS SHOWED
BACTERIOSTATIC ACTIVITY AGAINST L(ACETOACILLUS) CASEI 7369 AND
STREPT(OCOCCUS) FAECALIS 8043. FACILITY: VSES. NAUCH.--ISSLED.
KHIM.-FARM. INST. IM. OPDZHONIKIDZE, MOSCOW, USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--17JUL70

TITLE--THE ACID BASE BALANCE DURING OPERATIVE INTERVENTIONS IN PATIENTS
SUFFERING FROM DIABETES MELLITUS -U-

AUTHOR--MARKOV, I.N., SHERBAKOV, L.S.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 1, PP 104-109

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIABETES MELLITUS, ACID BASE EQUILIBRIUM, ACIDOSIS, ALKALOSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1577/1706

STEP NO--UR/C531/70/000/001/0104/0109

CIRC ACCESSION NO--AP0044851

UNCLASSIFIED

Acc. Nr: AP0044851

Ref. Code: UR 0531

PRIMARY SOURCE: Khirurgiya, 1970, Nr 1, pp 104-109

THE ACID-BASE BALANCE DURING OPERATIVE
INTERVENTIONS IN PATIENTS SUFFERING
FROM DIABETES MELLITUS

I. N. Markov, L. S. Shcherbakova

As early as in the postoperative period in patients suffering from diabetes mellitus there may be seen alterations in the acid-base balance, commonly characteristic for metabolic acidosis. It is only natural that in conditions of operative intervention changes of the acid-base balance towards acidosis or alkalosis may be more pronounced. As the result of observations over 40 patients with diabetes mellitus subjected to different operations it was established that commonly metabolic acidosis is noted in patients suffering from acute and chronic diseases of the gallbladder.

An investigation of the acid-base balance during operations was performed on the micro-Astrup apparatus, which enabled rapid determination of the occurring changes. Timely elimination of complications of the acid-base balance is conducive to a more favorable course of the postoperative period.

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REEL/FRA
19771708

DI

02

SHCHERBAKOVA, L. V.

UDC 532.511.12

PROPOSALS FOR DESIGNING MODELS OF THE INTERNATIONAL STANDARD ATMOSPHERE

(Article by Professors S. S. GAVRILOV, E. B. Zhurava, N. A. Yellmova, M. Ya. Kallikman, Candidates of Geographic Sciences Yu. P. Korneilov, D. A. Tatarskiy, Professor Ye. G. Shvilkovskiy, L. V. Shcherbakova, Central Aerological Bureau, Professor Ye. G. Shvilkovskiy, L. V. Shcherbakova, Central Aerological Bureau, Moscow, *Iskusstvennyy Atmosfer*, No 2, 1972, submitted 6 July 1972, pp 38-40)

A study was made of the vertical profile of the mean annual temperature of the hemisphere and also models of the standard atmosphere for different latitudinal zones and possible longitudinal variations. The characteristic of the data used to construct the models of the standard atmosphere is presented.

Introduction

The present proposals with respect to expansion of the international standard atmosphere are presented in the procedures for execution of the resolutions of the meeting of the Working Group of the ISO (International Standardization Organization) TK-20/EC-6 26-29 May 1969. The working group adopted the resolution to charge the USA (A. L. Cole) and the USSR (Ye. G. Shvilkovskiy) with preparing the design for models of the international standard atmosphere for altitudes of 20-60 km (the mean distribution and the standard atmosphere reflecting the latitudinal and seasonal variations). In the resolution there is a recommendation regarding the necessity of selecting the temperature profile closest to the mean annual profile with respect to the Northern Hemisphere for the mean model. At the meeting of the working group, it was recognized as desirable to expand the standard atmosphere to 83 km, considering the data in the 60-80 km layer as a supplement to the basic profile.

The given proposals were presented by the Soviet Union for examination by the Sixth Working Group of the Twentieth Technical Commission of the International Standardization Organization (ISO/TC-6 - 6) -- Standard Atmosphere -- a meeting of which was held in France (Nouveauville) in February 1970.

SPRS 35693
4 May 72

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1/2 024 UNCLASSIFIED
TITLE--ZEOLITE GAS PHASE EQUILIBRIUM IN A PROPANE ETHYLENE SYSTEM --U-
AUTHOR--(02)-SHCHERBAKOVA, P.R., GYK, S.SH.
COUNTRY OF INFO--USSR
SOURCE--GAZOV. PROM. 1970, 15(1), 41-2
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ZEOLITE, PHASE EQUILIBRIUM, PROPANE, ETHYLENE, GAS STATE, GAS ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3002/1121
CIRC ACCESSION NO--AP0128548
STEP NO--UR/0472/70/015/001/0041/0042
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--A20128548

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. C SUB2 H SUB4 NEGATIVE C SUB3 H SUB8 MIXTS. DRIED BY PASSAGE THROUGH KA ZEOLITE IN AN ADSORBER WERE ADMITTED AT A RATE OF 1.5 ML-MIN AT 20DEGREES INTO AN 8 MM DIAM. COLUMN CONTG. A 65 MM LAYER OF N DRIED CAA ZEOLITE OF 0.5-2.0 MM PARTICLE SIZE UNTIL EQUIL. WAS ATTAINED. THE ADSORBENT WAS GRADUALLY HEATED TO 400-500DEGREES, AND THE DESORBED GAS WAS ANALYZED. RELATIVE VOLATILITY COEFFS. WERE CALCD. FROM DATA ON C SUB2 H SUB4 CONC. IN THE ADSORBATE AND GAS PHASES AND ADSORPTION EQUIL. CURVES WERE PLOTTED WHICH SHOWED AN "AZEOTROPIC POINT" WHEN THE MOLE FRACTION OF C SUB2 H SUB4 WAS 0.89.

UNCLASSIFIED

1/2 012
TITLE--DRYING NORMAL PROPYL ALCOHOL WITH SYNTHETIC ZEOLITES -U-
AUTHOR--(03)--SHCHERBAKOVA, P.R., MAKUSHKINA, A.I., BYK, S.SH.
COUNTRY OF INFO--USSR
SOURCE--NEFTEPERERAB. NEFTEKHIM. (MUSCOW) 1970, (2), 41
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PROPANOL, ZEOLITE, ADSORPTION, WATER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/1882
CIRC ACCESSION NO--AP0112862
STEP NO--UR/0318/70/000/002/0041/0041
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NU--AP0112862

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROH, CONTG. 0.22-1.90 WT. PERCENT WATER, WAS PASSED AT 20DEGREES AND VELOCITY 0.31 AND 0.28 CM PER MIN THROUGH A BED OF 19.5 AND 23 CM HIGH AND 2.87 1.76 CM PRIME2 OF KA AND NAA ZEOLITES, WITH DYNAMIC ACTIVITY TO WATER 12.2 AND 14.7PERCENT, RESP., TO GIVE PROH WITH 0.002PERCENT WATER CONTENT. THE ADSORBENT COULD BE REGENERATED BY HEATING 12 HR AT 370-400DEGREES.

UNCLASSIFIED

USSR

UDC 547.971.2

FREYDLIN, L. KH., SHARF, V. Z., KROMIY, V. N., and ~~SHCHERBAKOVA, S. I.~~,
Institute of Organic Chemistry imeni N. D. Zelinskiy, Academy of Sciences USSR

"An Investigation of the Reduction of Cyclohexanone with an Alcohol in the
Presence of Tris(triphenylphosphine)dichlororuthenium"

Leningrad, Zhurnal Organicheskiy Khimii, Vol 8, Vyp 5, May 72, pp 979-981

Abstract: The authors investigated the homogeneous catalysis by tris(triphenylphosphine)dichlororuthenium of the reduction of cyclohexanone with several five- to seven-carbon aliphatic alcohols. Reactions were conducted under reflux condenser under an atmosphere of argon or hydrogen, and analysed by gas-liquid chromatography. The low yield of cyclohexanol shows that condensation is a side reaction. The reaction rates for various degrees of substitution on the alpha carbon were studied. They showed a correlation between increased steric hindrance and slower rate of reaction. The intermediate formation of a hydride of tris(triphenylphosphine)dichlororuthenium was suggested as a mechanism. Hydrogenation by the ambient medium contributes to the reduction of cyclohexanone.

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USSR

KRUPATKIN, I. L., SHIRSHINA, I. G., and SHCHERBAKOVA, T. A., Kalinin Polytechnical Institute

UDC 541.49:541.123.2:546.185+547.564

"Study of the Double Systems of Phosphoric Acid With Some Derivatives of Phenol and Naphtols"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 9, Sep 72, pp 1881-1884

Abstract: Seven double systems of phosphoric acid with m-chlorophenol o-nitrophenol, m-nitrophenol, thymol, vaniline, α -naphtol, and β -naphtol were investigated by means of visual-polythermal method in temperature range 0-140°, using fusibility and lamination as the end points. It has been shown that the system with m-chlorophenol is a system with upper critical point located considerably above the 140°. The systems with o- and m-nitrophenols, α - and β -naphtols and thymol correspond to systems with lower critical points being in the range of metastable state below the experimentally determined monotectic temperatures. It was established that the temperatures of monotectic reactions and the melting points of o-, m- and p-derivatives of the phenol and α - and β -naphtols change symbatically. This does not occur with chlorophenols. In the system phosphoric acid-vanilin a compound with a 1:1 composition has been noted, melting congruently at 96.8°.

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1/2 013
TITLE--EXTRACTION SYSTEMS OF UNCLASSIFIED PHOSPHORIC WITH SOME AROMATIC ALDEHYDES -U- PROCESSING DATE--13NOV70
AUTHOR--SHCHERBAKOVA, T.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3), 556-61
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHASE DIAGRAM, PHOSPHORIC ACID, AROMATIC ALDEHYDE, HYDROGEN
BONDING, BENZENE DERIVATIVE, SOLVENT EXTRACTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/2014
CIRC ACCESSION NO--AP0132275
STEP NO--UR/0080/70/043/003/0656/0661
UNCLASSIFIED

2/2 013

CIRC ACCESSION NO--AP0132275

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. PHASE DIAGRAMS AT 25DEGREES ARE GIVEN FOR (A) H SUB3 PO SUB4-H SUB2 O-PHCHO AND (B) H SUB3 PO SUB4-H SUB2 O, SALICYLALDEHYDE AND ARE COMPARED WITH THAT FOR (C) H SUB3 PO SUB4-H SUB2 O-PHOH (KRUPATKIN, 1952). DIAGRAMS FOR ALL 3 SYSTEMS SHOW STRATIFICATION REGIONS THAT OCCUPY LARGE AREAS OF THE DIAGRAMS, WITH BIMODAL CURVE MAX. LOCATED NEAR THE H SUB3 PO SUB4 CORNER. THE DIAGRAMS INDICATE THAT H SUB3 PO SUB4 HOMOGENIZES BINARY STRATIFICATION OF THE OTHER 2 COMPONENTS. THE BIMODAL MAX. ARE A 77, B 78, AND C 95PERCENT H SUB3 PO SUB4. THE ABSENCE OF ANY EFFECT BY THE SALICYLALDEHYDE OH GROUP IS ATTRIBUTED TINTRAMOL. FACILITY: KALININ. POLITEKH. INST., KALININ, USSR.

UNCLASSIFIED

SHCHERBEKOVA, T. I.

SPRS 59208
6-73

XII-10. STRUCTURE AND ELECTRICAL PROPERTIES OF INDIUM ARSENIDE FILMS OBTAINED BY THE GAS TRANSPORT METHOD IN WATER VAPOR

Article by G. V. Chuplygin, S. A. Semiletov, T. I. Shcherbekova, Moscow: Novosibirsk, III Symposium on Polymers, Krasnaya Sibirskaya Polymerskaya Khranilnitsa, 12-17 June 1972, p 173

A study was made of the dependence of the morphology, the actual structure and the electrical properties of indium arsenide films on the composition of the vapor phase, the temperature in the crystallization zone and the orientation of the substrates made of polished palladium arsenide.

On the basis of the thermodynamic analysis of the $\text{InAs-H}_2\text{O-H}_2$ system, the water vapor pressure region was defined which insures a stoichiometric ratio of indium and arsenic in the gas phase.

It was demonstrated experimentally that the indium arsenide films obtained by the gas transport in water vapor are not inferior to the initial single crystals with respect to their electrical properties.

USSR

ZUBKOVA, T. P., and SHCHERBAKOVA, V. I.

"Refinement of the Synthetic Process for Methylphenylcarbinol"

V sb. Khim sredstva Zashchity rast. (Chemical Plant Protective Agents -- collection of works), No 2, Moscow, 1972, pp 84-86 (from RZh-Khimiya, No 19, Oct 73, Abstract No 19N483)

Translation: Methylphenylcarbinol (I) is synthesized by hydrolysis of α -chloroethylbenzene (II) obtained from the hydrochlorination of styrene (III). The synthetic process for I has been elaborated in detail. To find optimal conditions for the synthesis of II, the effect of the relationship between the reagents and reaction temperature on the yield of product has been investigated. Optimal ratio of III-HCl is 1:82.5 g-mole, temperature change in the range from 0° to 15° has negligible effect on the yield of II, increasing the temperature to 20° lowers the yield to II. To a solution of 104 g of III in 160 g C₆H₆ 3.12 g ZnCl₂ is added, the mixture cooled to 10° and 82.5 g HCl (gas) is passed through it for 6 hrs at 10-15°, the reaction mixture is washed with 200 ml of a 7% solution of soda and 100 ml water, C₆H₆ is distilled off, and the residue saponified with a solution of soda (67.5 g in 400 ml water)

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USSR

ZUBKOVA, T. P., and SHCHERBAKOVA, V. I., V Sb. Khim. sredstva zashchity rast.
No 2, Moscow, 1972, pp 84-86

at 96-97° for 5 hrs, the contents are cooled, the organic layer separated
and distilled yielding 75.03 g I, b.p. 64°/3, n_D^{20} 1.5280, d_4^{20} 1.0234.

2/2

USSR

UDC: 518.5:681.3.06

SHCHERBAKOVA, V. M., ROGOVOY, V. M.

"An Algorithm for Rapid Fourier Transformation"

Sb. tr. Mosk. tekhnol. in-t (Collected Works of Moscow Technological Institute), 1971, No 21, pp 183-194 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V610)

[No abstract]

1/1

USSR

UDC 669.15'292'293;295-194.2

SHCHERBAKOVA, V. S., SARRAK, V. I., LIFSHITS, L. S., and GRINBERG, N. A.,
All-Union Scientific Research Institute for Construction of Trunk Pipelines
and Central Scientific Research Institute of Ferrous Metallurgy imeni I. P.
Bardin

"Properties and Nature of Hardening Low-Alloy Steel Containing Small Quantities
of Niobium, Vanadium, and Titanium"

Moscow, Stal', No 6, Jun 71, pp 538-542

Abstract: Kinetics of niobium carbonitride separation in low-alloy ferritic steel containing 0.05% Nb, the role of the microstructure and dispersion hardening in developing properties, and the effect of rolling and normalization processes on properties of steel micro-alloyed only by niobium were investigated. It was found that the low-alloy steel containing 0.2% C, 1.15-1.4% Mn, and approximately 0.05% Nb begins to harden by aging in 2-4 hrs at 500°C as a result of separation of carbides, nitrides, and carbonitrides of niobium (phase NbC). The separation of this phase in austenite has little effect in changing the properties of steel with niobium, but a separation in ferrite promotes hardening. The developing embrittlement can be avoided by

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- 64 -

USSR

SHCHERBAKOVA, V. S., et al., Stal', No 6, Jun 71, pp 538-542

rolling and normalization control. By the most effective alloying (Nb + V or Nb + V + Ti), a high complex of strength and plasticity properties can be obtained. The cold brittleness threshold of steel in the hot-rolled condition can be lowered by changing the rolling method. Four illustrations, four tables, nineteen bibliographic references.

2/2

SHCHERBAKOVA, Ye. V.

PRODUCTION OF HIGHLY TEXTURIZED PERMANENT MAGNETS
FROM MAGNETICALLY ANISOTROPIC POWDERS

Article by Ye. V. Shcherbakova, L. M. Nagat, A. S. Yermolov, N. A. Zaslavskiy, V. S. Averkhov, A. V. Derzhavina, V. S. Boydenko, and Ye. V. Shcherbakova, Institute of Metal Physics, USSR Academy of Sciences, Metallovedeniye, Russian, Vol 35, No 2, 1973, 242-244, 13 December 1971, pp 422-424

JPRS 60497
9 November 1973

In recent years considerable successes have been achieved in the field of developing materials for permanent magnets from synthetic compounds of the type RCo_5 (where R is one of the rare-earth elements - yttrium or thorium), which possess extremely high values of the constant of uniaxial anisotropy (in the order of 10^7 - 10^8 erg/cm³), for example, $1/1$. The process of manufacturing permanent magnets from such materials is reduced to grinding an alloy and compacting the resultant powder. Here, since due to the high value of anisotropy energy, the role of the magnetic interaction turns out to be insignificant and the powder can be compacted without substantial lowering of the coercive force, to a density close to the solid material. All the particles must be oriented prior to compaction to obtain the maximum possible value of magnetic energy (it is suggested that each particle is a single crystal and, consequently, of easy magnetization along one direction so as to create the magnetic structure. This can usually be achieved by means of planing the powder in a magnetic field. The main difficulty in preserving the magnetic texture during the subsequent compaction of the powder is $2/2$.

- 1 -
(1 - USSR - 1)

172 033
UNCLASSIFIED
TITLE--COMPARATIVE CHARACTERISTICS AND STABILITY OF ASPERGILLUS NIGER
STAINS PRODUCING CITRIC ACID -U-
AUTHOR--SHCHERBAKOVA, YE.YA.
COUNTRY OF INFO--USSR
SOURCE--PRIKL. BIKHIM. MIKROBIOL. 1970, 6(1), 69-74
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ASPERGILLUS, CONTINUOUS CULTURE, CITRIC ACID, BIOSYNTHESIS,
MUTAGEN, MICROORGANISM MUTATION, RADIATION INDUCED MUTATION, UV
RADIATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FNAME--3001/0347
CIRC ACCESSION NO--AP0126103
STEP NO--08/0421/70/000100/00010076
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11DEC70

2/2 033
CIRC ACCESSION NO--AP0126103

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE CAPACITY OF VARIOUS A. NIGER STRAINS TO PRODUCE CITRIC ACID WAS STUDIED. THE FOLLOWING STRAINS WERE USED: THOSE KEPT FOR A LONG TIME IN THE COLLECTION, FRESH CULTURES ISOLATED FROM VEGETABLE AND FRUIT SURFACES, STRAINS 82 AND 90 THAT WERE EXPOSED TO MUTAGENIC FACTORS, UV RADIATION, ETHYLENIMINE AND COMBINED TREATMENT WITH UV IRRADN. AND ETHYLENIMINE. SOME ACTIVE STRAINS OBTAINED WITH THE MUTAGENS APPEAR TO THE INITIAL STRAINS IN THEIR PRODUCTIVITY.

FACILITY: LENINGRAD RES. INST. FOOD IND.

LENINGRAD, LSSR.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--COMPARATIVE CHARACTERISTICS AND RESISTANCE OF ASPERGILLUS NIGER
ACTIVE STRAINS PRODUCING CITRIC ACID -U-
AUTHOR--~~SHCHERBAKOVA~~, YE.YA. S
COUNTRY OF INFO--USSR
SOURCE--PRIKLAD BIOKHIM MIKROBIOL 6(1): 69-74
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ASPERGILLUS, CONTINUOUS CULTURE, CITRIC ACID, MICROORGANISM
MUTATION, MUTAGEN, UV RADIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3008/0032

STEP NO--UR/0411/70/006/001/0069/0074

CIRC ACCESSION NO--AP0137231

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137231

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CAPACITY OF VARIOUS A. NIGER STRAINS TO PRODUCE CITRIC ACID WAS STUDIED. THE FOLLOWING STRAINS WERE USED: THOSE KEPT FOR A LONG TIME IN THE MUSEUM, FRESH CULTURES ISOLATED FROM VEGETABLE AND FRUIT SURFACES, STRAINS 82 AND 90 THAT WERE EXPOSED TO MUTAGENIC FACTORS (UV IRRADIATION, ETHYLENE IMINE AND COMBINED TREATMENT WITH UV IRRADIATION AND ETHYLENE IMINE). SOME ACTIVE STRAINS THAT WERE OBTAINED UNDER THE INFLUENCE OF THE MUTAGENIC FACTORS, STRAINS 288, 288-9, ETC, WERE NOT INFERIOR TO THE INITIAL STRAINS IN THEIR RESISTANCE TO ADVERSE ENVIRONMENTAL EFFECTS. THEY APPEARED SUPERIOR TO THE INITIAL STRAINS IN THEIR PRODUCTIVITY AND RESPONSE TO SOME OF THESE FACTORS.

FACILITY: LENINGRAD RES. INST. NUTR. IND., LENINGRAD, USSR.

UNCLASSIFIED

USSR

SHCHERBAN', A. N., et al., Teplofiz. i teplotekhnika, Resp. mezhved. sb., 1970, vyp 17

depth telemetering thermometer as compared with known prototypes possesses much higher portability, increased reliability, low threshold of sensitivity and invariance of readings with the change in parameters of the two-wire cable link of the telemetering thermometer-thermosonde with the surface.

Resume

2/2

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Miscellaneous

USSR

UDC 621.398.93

SHCHERBAN, A. N., FURMAN, N. I., PRIMAK, A. V., KOPEIKIN, V. I.,
POKARZHEVSKIY, A. S., MARUSOV, A. G., DASHEVSKIY, L. N., and KHOMYAKOV, A. T.,
Institute of Technical Heat Physics, Acad. Sc. Ukr SSR, Gas Institute, Acad.
Sc. UkrSSR

"Telemetric System for Sanitation-Chemical Control of Air Pollution"

Kiev, Khimicheskaya Tekhnologiya, No 3, (63), May-Jun 72, pp 49-52

Abstract: A complex system is discussed designed to fulfill the following functions: organization of the input operations of the informations from control-determination points (CDP) into the computer memory with wide range of possible changes in the frequency and order of query to CDP; determination of the measurement points with higher pollution and increased frequency of queering the respective recorder; statistical treatment of the information, tabulation or graphing of the results; and analysis of the effectiveness of the utilization of purifying equipment by the change in air pollution in a controlled region.

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1/2 008 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--FORMATION OF COMPOUNDS OF AROMATIC, THIOPHENE, AND DIENE SERIES
DURING THE PYROLYSIS OF COAL AND VAPOR GAS PYROLYSIS PRODUCTS -U-
AUTHOR-(04)-MARIICH, L.I., GANZHA, L.M., LENKEVICH, ZH.K., SHCHERBAN, I.P.

COUNTRY OF INFO--USSR

SOURCE--KHIM. TVERD. TOPL. 1970, (3), 127-31

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DIENE, THIOPHENE, PYROLYSIS, COAL, BENZENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRADE--3008/0865

STEP NO--UR/0467/70/000/003/0127/0131

CIRC ACCESSION NO--AP0137893

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137893

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PYROLYSIS OF COAL WAS DONE IN A LAB. TUBULAR FURNACE CONSISTING OF 2 SECTIONS, THE FIRST FOR COKING AT 25-800DEGREES, AND THE SECOND FOR PYROLYSIS OF GASEOUS PRODUCTS FROM THE 1ST SECTION. THE MAIN FACTOR DETG. THE QUANT. COMPN. OF THE PRODUCTS WAS THE TEMP. OF PYROLYSIS OF THE GASES. WITH INCREASED TEMP., THE BENZENE AND THIOPHENE IN THE TOTAL GAS INCREASED. THE CONTENTS OF CYCLOPENTADIENE, AND THE METHYL DERIV. OF BENZENE AND THIOPHENE PASSED THROUGH A MAX. WITH TEMP. FACILITY: UKR. UGLEKHM. INST., KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC 621.762.4:539.374

SHCHERBAN', N. I., Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR

"Effect of Porosity on the Mechanical Properties of Materials Produced by Powder Metallurgy Methods"

Kiev, Poroshkovaya Metallurgiya, No 9, Sep;73, pp 57-73

Abstract: An attempt was made to derive a formula which would truly describe the effect of porosity in the interval $0 \leq \theta \leq 1$ on the mechanical properties of materials produced by powder metallurgy methods. Much of the article is devoted to the steps taken to derive this formula along with graphs showing the relationships of mechanical properties of sintered materials to porosity (θ). A table accompanies the text which lists the materials tested, sintering conditions, and mechanical properties which were used in the formulas. In addition, a procedure is proposed for plotting the relationships of mechanical properties to porosity for the limited amount of data available. 5 figures, 1 table, 41 bibliographical references.

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Powder Metallurgy

USSR

UDC 621.762.001.4

BOYKO, P. A., and SHCHERBAN', N. I., Kiev Polytechnical Institute

"Compaction of Nickel-Carbide Compositions"

Kiev, Poroshkovaya Metallurgiya, No 10, Oct 70, pp 23-26

Abstract: Strengthening of metals with finely dispersed particles has been in recent years the topic of a number of both theoretical and experimental studies. Since dispersion-strengthened alloys are produced by pressing the powders with subsequent sintering and extrusion of the bars, it has been of interest to investigate the compaction of the composite powders. This study concerns the compactability of nickel powders (Ni-ZrC, Ni-NbC, Ni-WC) containing 0.1-16 vol.% of zirconium, niobium, and tungsten carbides as compared to that of pure nickel powder. Figures in the original article show the dependence of the density of compacts on compacting pressure, the properties of disperse nickel powders and nickel-carbide compositions, and the porosity of compacts versus compacting pressure. It has been shown that the addition of carbides decreases the density of the compacts while it increases their porosity. The relationship between the density of compacts, compacting pressure, and carbide contents is identical to that of iron-glass compositions.

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Powder Metallurgy

USSR

YURCHENKO, A. G., ~~SHCHERBAN', N. I.~~, and FUGINA, I. I., Institute for Problems of Material Science, Academy of Sciences Ukrainian SSR

"Elastic Aftereffect of Iron-Graphite Pressed Parts in Cold Pressing"

Kiev, Poroshkovaya Metallurgiya, No 5, May 70, pp 20-22

Abstract: Determinations were made of the radial elastic aftereffect in the pressing of iron-graphite materials based on brand PZh2M iron powder (All-Union State Standard 9849-61) containing 3 to 30% by mass of graphite as the second component. A hydraulic press with a force of 200 tons was used in the experiments. Five or six samples of each composition were pressed under compacting pressures of from 10 to 100 kg/mm² in a mold with an outer die diameter of 70 mm and an inner one of 28 mm.

From the data obtained it was determined that with a rise in compacting pressure and a rise in the graphite content in the mixture, the elastic aftereffect of the material increases, but the general appearance of the relation is maintained with some decrease in the curvature of the lines. Consequently, the elastic aftereffect of two-component iron-graphite materials conforms with those regularities which are observed in the pressing of single-component materials based on iron. The data indicate that, in the process of cold pressing, the stresses in the region of contact between particles can be described by the Hertz theory, according to

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USSR

YURCHENKO, A. G., et al., Poroshkovaya Metallurgiya, No 5, May 70, pp 20-22

which the approach between centers of two ideally elastic spheres is proportional to the compressive force in the degree of $2/3$.

2/2

USSR

UDC 619:615.92:636.22/.28

GOLOSNTITSKIY, A. K. Professor, SHCHERBAN', N. F., Doctor of Veterinary Sciences, North Caucasus Zonal Scientific Research Veterinary Institute, SKARGIN, V. I., Chief Veterinary Physician, and FILIPOVICH, N. P., Director of the Veterinary Laboratory, Chertkovskiy Rayon, Rostovskaya Oblast

"On the Toxicology of Chlorophos"

Moscow, Veterinariya, No 4, 1973, p 102

Abstract: Studies were conducted on 26 bulls in an artificial insemination program following intoxication with chlorophos. On that day the barn had first been disinfected with 3% sodium hydroxide, and in the afternoon the bulls were treated with 3% chlorophos solution. Due to falling temperature the barn was closed and soon became filled with chlorophos vapors. The bulls developed the following symptoms: decreased heart rate, salivation, skeletal muscle tremor, incoordination, depressed body temperature, respiratory difficulties, convulsions, and refused feed; 10 of the bulls died. Autopsies disclosed cyanosis of the mucous membranes, congestion of liver, spleen, and especially of the lungs; gall bladders were enlarged in most of the animals, and epicardial and endocardial hemorrhages were present. On diagnosis treatment with atropine sulfate and intravenous glucose and caffeine was instituted. Blood levels of

1/2

-55-

USSR

UDC 576.882.8095.38:576.895.77

SHCHERBAN', Z. P., and GOL'BERG, A. M., Laboratory of Parasitology, Institute of Zoology and Parasitology, Academy of Sciences Uzbek SSR, and Division of Medical Entomology, Institute of Medical Parasitology and Tropical Medicine imeni Ye. I. Martynovskiy, Ministry of Health USSR, Moscow

"Pathogenic Fungi Coelomycidium (Phycomycetes, Chytridiales) and Coelomoncyces (Phycomycetes, Blastocladales) on Mosquitoes of the Genera Culex and Aedes (Family Culicidae, Diptera) in Uzbekistan"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40, No 1, Jan/Feb 71, pp 110-111

Abstract: In 1968-69 a parasitic fungus of the genus Coelomycidium was found on 2.4% and 3.6%, respectively, of female Culex modestus and C. pipiens mosquitoes collected in the summer and fall in the Fergana Valley. The infected mosquitoes fed readily on man animals, but died one week after feeding on the blood. Aedes caspius female mosquitoes in the same area were infected with the fungus Coelomoncyces psorophora to the extent of 5.8%. The infected females were collected from vegetation and had no blood in their stomachs. Apparently, the infected mosquitoes that were not infected with the fungus were attracted by prey used as bait in capturing them. The data obtained are of interest in 1/2

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SHCHERBAN', Z. P., and GOL'BERG, A. M., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 40, No 1, Jan/Feb 71, pp 110-111

view of the successful use on an experimental basis of Coelonomyces fungi to control mosquitoes on islands in the Pacific and in Zambia.

2/2

USSR

UDC: 8.74

SHCHERBASHIN, Yu. D., IVANOVA, A. I.

"A Language for Describing Systems for Monitoring and Control of Technological Processes"

Tr. NII upravl. vychis. mashin (Works of the Scientific Research Institute of Control Computers), 1971, vyp. 4, pp 31-45 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V619)

Translation: The paper gives a brief description of a specialized language which can be used for describing and automatically arranging software in systems for monitoring and control of continuous technological processes. Use of this language facilitates and simplifies the procedure of program compilation in developing specific automatic control systems. Authors' abstract.

1/1

USSR

UDC 621.43.52

GUS'KOV, V. P., PRISEDSKIY, N. N., SHCHERBATENKO, V. V.

"One Method of Determination of the Transient Characteristics of a Pressure Sensor with a Pipe"

Samoletostr. i Tekhn. Vozd. Flota. Resp. Mezhved. Temat. Nauch.-Tekhn. Sb. [Aircraft Construction and Air Force Technology. Republic Interdepartmental Thematic Scientific and Technical Collection], 1971, No. 25, pp 25-35. (Translated from Referativnyy Zhurnal Aviatsionnye i Raketnye Dvigateli No 1, 1972, Abstract No 1.34.70, from the resume).

Translation: A hydraulic installation for investigation of the transient processes in low-frequency pressure sensors with connecting tubes of various geometries is described. The perturbation signal at the input of the measuring lines is formed by clearing the pressure through an electromagnetic valve. A method is presented for performing experiments. A critical analysis of the attenuation quality diagrams is presented on the basis of experimental curves of the transient processes. The results of tests clarifying the quadratic resistance factor of the connecting lines of the sensors are presented. 7 figs; 2 biblio refs.

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1/2 009 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PREPARATION OF DOUGH FROM WHEAT FLOUR -U-
AUTHOR--(03)-SHCHERBATENKO, V.V., KOZLOV, G.F., PAIT, V.A.
COUNTRY OF INFO--USSR S
SOURCE--U.S.S.R. 262,788
REFERENCE--UTKRYTIYA, IZOBRET., PROM. OBRATZSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--04FEB70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY
TOPIC TAGS--CHEMICAL PATENT, WHEAT, PROCESSED PLANT PRODUCT, AMINO ACID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/1082 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0130117

2/2 009
CIRC ACCESSION NO--AAG130117

UNCLASSIFIED

PROCESSING DATE--20NOV79

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT, DOUGH WAS PREPD. FROM WHEAT FLOUR
IN AN INTERMEDIATE PRODUCT BY ADDN. OF CYSTEINE, WHICH HAD BEEN PREMIXED
WITH FLOUR AND WATER. THE RESULTING MIXT. WAS ACTIVATED AT 31-50 DEGREES
FOR 10-20 MIN. CYSTEINE WAS 0.003-0.02 WT. PERCENT OF THE FLOUR WHICH
CONSTITUTED 20-5 PERCENT OF THE MIXT. WHICH ALSO CONTAINED 60-5 PERCENT
WATER. FACILITY: ALL-UNION SCIENTIFIC-RESEARCH INSTITUTE OF THE
BAKING INDUSTRY.

UNCLASSIFIED

USSR

CHAGIN, I. M., and SHCHERBATYKH, YU. I.

"The Problem of the Automation of the Filtration Processes in the Production of Pesticides"

V sb Khim. sredstva zashchity rast. (Chemical Plant Protective Agents), Moscow, Vyp 2, 1972, pp 106-109 (from RZh-Khimiya, No 21, Nov 73, Abstract No 21N535)

Translation: The filterability of 6-chlorobenzoxazolinone pulp obtained by chlorination of benzoxazolinone in tetrachloroethane has been investigated. It has been shown that in order to achieve the automation of the filtration processes during production of pesticides speciall hermetically sealed, explosion proof filters has to be developed, made of materials resistance to aggressive media consisting of organic solvents saturated with chlorine and hydrogen chloride.

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Acc. Nr:

AP0106263

Abstracting Service: 6-70
INTERNAT. AEROSPACE ABST.

Ref. Code:

UR 0120

A70-28187 # Ohmic contacts for gallium arsenide single crystals (Omicheskie kontakty k monokristallam arzenida galliia). A. V. Sandulova, S. S. Varshava, and K. S. Shcherbak. (L'vovskii Politekhnikeskii Institut, Lvov, Ukrainian SSR). *Priory i Tekhnika Eksperimenta*, Jan.-Feb. 1970, p. 224, 225. 5 refs. In Russian.

Description of a technique for obtaining ohmic contacts attached to gallium arsenide single crystals having the form of filaments or ribbons grown from the gaseous phase. The contacts are obtained when microwires are welded on with the aid of an ac furnished by an additional electrode, using alcohol as a protective medium. The ohmic contacts have linear current-voltage characteristics and provide resistances from 1/10k to 1/100k ohm/sq cm in low-resistance n and p type specimens.

V.Z.

mc

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19881507

USSR

UDC 538.318

SIROTA, N. N., and SHCHERRATSEVICH, V. YE.

"Study of Ferromagnetic Resonance in Nickel-Magnesium-Chromium Ferrites"

Minsk, Izvestiya Akademii Nauk BSSR, Seriya Fiziko-Matematicheskikh Nauk, No 5, 1971, pp 95-100

Abstract: The article describes results of a study of properties of ferrites of the ternary system $\text{NiO} \cdot \text{Fe}_2\text{O}_3 - \text{MgO} \cdot \text{Fe}_2\text{O}_3 - \text{Cr}_2\text{O}_3 \cdot \text{Fe}_2\text{O}_3$ in the resonance region in a wide temperature range on cylindrical specimens of varying diameter. The study included variations in the resonance linewidth and the value of the resonance field of the ferrites according to their composition and temperature, a determination of values of the minimum resonance linewidth and g -factors of ferrites of the single-phase region of the system, as well as a study of the effect of electromagnetic wave propagation in ferrite specimens on the resonance field value and linewidth. The SHF properties of the ferrites were measured by the waveguide method on a frequency of 9370 Mhz. A study was also made of the effect of the specimen diameter on resonance linewidth and field

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USSR -

SIROTA, N. N., and SHCHERBATSEVICH, V. YE., Izvestiya Akademii Nauk BSSR, Seriya Fiziko-Matematicheskikh Nauk, No 5, 1971, pp 95-100

value. It is shown that the location of the ascending branch of the resonance curves does not depend on the diameter of the ferrite specimen but is determined by its composition.

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USSR

UDC 632.95

BASHANOV, YU. A., BAKHENKO, L. A., MEL'NIKOV, N. N., SVIDKAYA, P. I.,
STONOV, L. D., SIMONOV, V. D., SHVINDLERMAN, G. S., SHCHERBATYKH, YU. I.

"Meturin -- a New Herbicide for Cotton and Potatoes"

V sb. Khim. sredstva zashchity rast. (Chemical Agents for Plant Protection -- collection of works), vyp. 1, Moscow, 1970, pp 179-187 (from RZh-Khimiya, No 11, Jun 72, Abstract No 111446)

Translation: A new herbicide -- meturin (I) (N-phenyl-N-hydroxy-N'-methylurea) -- was synthesized. The compound can be produced with a high yield by reacting phenylhydroxylamine with K_2CO_3 . Treatment of vegetating plants with I is not highly effective. The best results are obtained when the herbicide is introduced into the soil before planting. As a rule, dicotyledons are more effectively suppressed by I than monocotyledons. Highly sensitive to I (70-100% inhibition of growth from a dose of 0.5 kg/hectare) are corn may-weed, sheep sorrel, wild beets, pigweed, wild rice, buckwheat, soybeans, tomatoes, cabbage, cucumbers, radishes, clover and alfalfa. Sensitive to I (70-100% death from a dose of 1.5 kg/hectare) are field pennycress, field wintergrass, barley grass, beans, vetch, carrots, beets and flax. Moderately sensitive (complete control with a dose of 3 kg/hectare) are oats, wheat, corn

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BASYAKOV, YU. A., et al., V sb. Khim. sredstva zashchity rast., vyp I,
Moscow, 1970, pp 179-187

beans, seed onions, and sunflowers. Rough snakeweed is among the weeds resistant to I, while potatoes and cotton are resistant crops. The compound retains high activity throughout the entire vegetative period in the upper layer of soil (0-5 cm). The activity of the herbicide begins to decline within 2 months after introduction in the lower and middle layers of soil. In doses of 3-4.5 kg/hectare, I destroyed 70-90% of the annual weeds in cotton fields, but in some instances caused temporary chlorosis in a dose of 4.5 kg/hectare. In potato fields, the compound in doses from 2 to 3 kg/hectare destroyed annual weeds throughout the entire season, which meant that potatoes could be grown without hilling. The compound has low toxicity for human beings. It is authorized in the Soviet Union for experimental production use on potatoes.

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